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Cytisine: the future of smoking cessation treatment

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Cytisine is a plant alkaloid that acts as a partial agonist on the alpha-4 beta-2 nicotinic acetylcholine receptor. It was licensed in the 1970s as an aid to smoking cessation in Central and Eastern Europe. There is evidence from multiple studies that cytisine is effective for aiding smoking cessation with the standard dosing period being 25 days. Studies have also been carried out with longer dosing periods and with 12 weeks of dosing it appears to have comparable efficacy to varenicline. A recent meta-analysis of randomised trials found an average odds ratio versus placebo of 2.33 for varenicline (95% Credible Interval 2.02 to 2.68; 67 RCTs, 16,430 participants) and 2.21 for cytisine (95% Credible Interval 1.66 to 2.97; 7 RCTs, 3848 participants) [1]. It appears to be more effective than standard forms of nicotine replacement therapy and have similar efficacy to e-cigarettes. Serious adverse event rates in people using cytisine have been found to be similar to those on placebo (Odds Ratio = 0.94, 95% Credible Interval 0.58 to 1.50). Minor adverse events are similar to varenicline, primarily nausea and sleep disturbance, but with lower incidence.

Cytisine is licenced for sale in many countries in the world including the UK, New Zealand and many

countries in Europe. Poland remains probably the country that has the highest usage with around 1 million courses bought per year by a population of some 7 million smokers. A major feature of this drug is its low cost.

Given the efficacy, side-effect profile and low cost of cytisine the next decade should see cytisine becoming the dominant smoking cessation medicine globally. However, from the evidence available there are grounds for believing that the standard dose should be increased to 12 weeks and that, as with other pharmacotherapies, it should be offered with psychological support consisting of tried and tested 'behaviour change techniques' to help smokers avoid and cope with smoking cues and provide social support.

DISCLOSURE

The author reports no conflict of interest.

Reference

1. Lindson N, Theodoulou A, Ordóñez-Mena JM, et al. Pharmacological and electronic cigarette interventions for smoking cessation in adults: component network meta-analyses. *Cochrane Database Syst Rev* 2023; 9: CD015226. DOI: [10.1002/14651858.CD015226.pub2](https://doi.org/10.1002/14651858.CD015226.pub2).